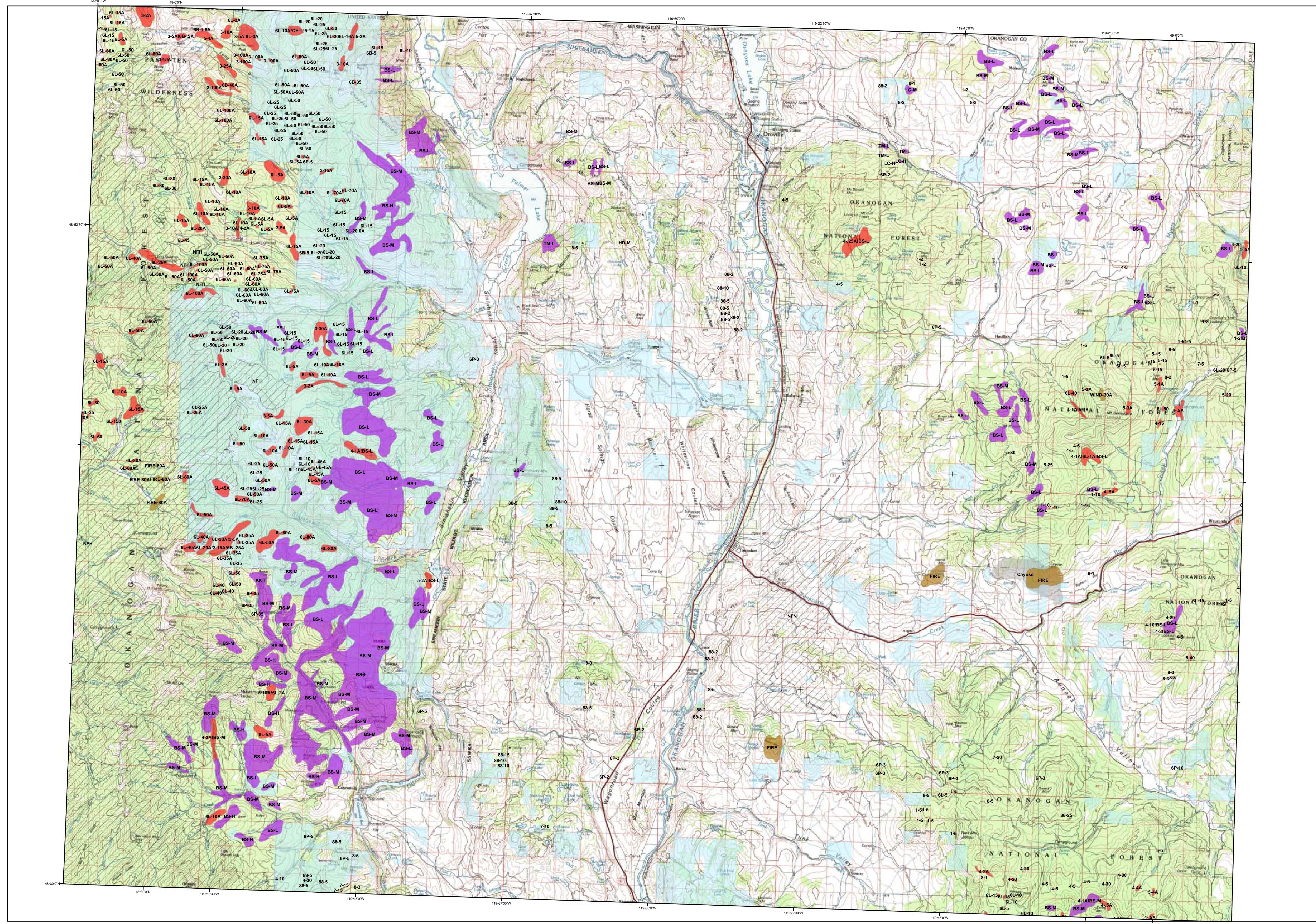


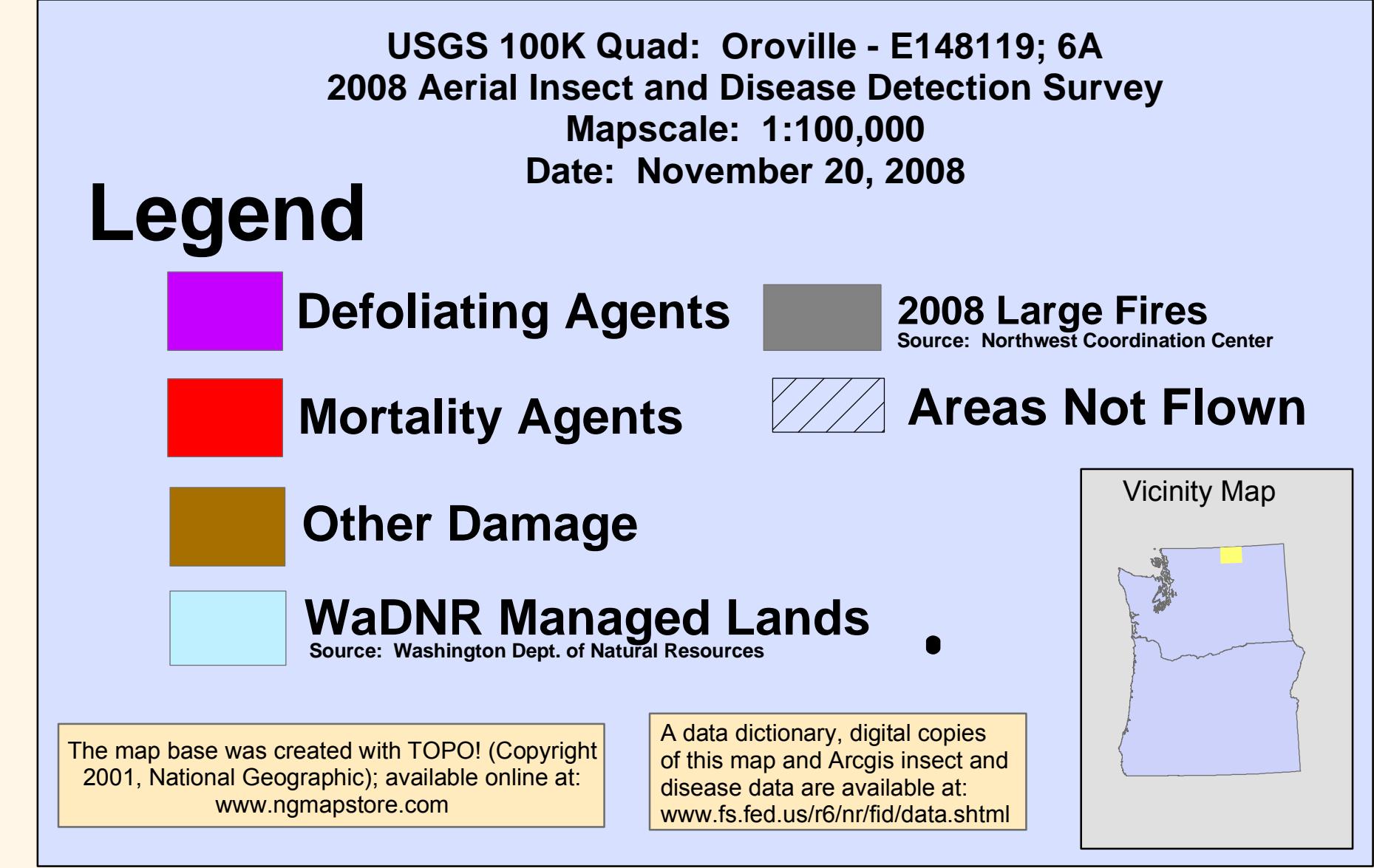
2008 Aerial Insect and Disease Survey

USGS 100K Quad: Oroville - E148119; 6A



Mortality Agents		
Code	Damaging Agent	Primary Host
AS	Spruce aphid	Sitka spruce
BB	Western larch budworm	Western larch, spruce, true fir
BM	Modoc budworm	White fir
BP	Western pine tortrix	Lodgepole, ponderosa pine
BS	Western pine budworm	Ponderosa pine, spruce
BY	Bryum's bright lophodermella	Byrum's bright lophodermella
CH	Larch	Western larch
H	Western hemlock looper	Western hemlock looper
LG	Green striped forest looper	Douglas-fir, Western hemlock
LL	Limber pine scale	Limber pine
LS	Black pine needle scale	Ponderosa pine
MD	Douglas-fir budmoth	Douglas-fir
MI	Juniper scale	Juniper
MN	Douglas-fir needle midge	Western larch
MS	Douglas-fir needle scale	Douglas-fir
ND	Needle miner	Spruce, fir
PC	Pine needle cast	Douglas-fir
PR	Pine bark looper	Jeffrey pine
PM	Pandora moth	Ponderosa, Jeffrey pine
PN	Pine needleheath miner	Pine
PS	Pine needle scale	Jeffrey pine
RC	Needle cast	Western larch
S	Sawfly	Conifer
SA	Sawfly	Tulip tree
SD	Sawfly	Douglas-fir
ST	Sawfly	True fir
SH	Sawfly	Hemlock
SL	Sawfly	Redwood
SM	Satin moth	Aspen
SC	Sawfly	Lodgepole pine
SP	Sawfly	Aspen
SW	Sawfly	Western larch
TC	Tent caterpillar, alder	Alder
TM	Tent caterpillar, other	Hardwoods
TS	Tent caterpillar, Douglas-fir	True fir, Douglas-fir
TS	Tent caterpillar, aspen	Aspen

The cause of mortality is represented by a symbol and is followed by: number of trees affected / number of trees/acre (example: 5A); or intensity of damage (L-Light, M-Moderate, H-Heavy).



How the Aerial Surveys Are Conducted

Data represented on this map are based on trees visibly affected by forest insects and diseases detected and recorded during aerial survey flights conducted by the USDA Forest Service and the Washington Department of Natural Resources. Observers have just a few seconds to recognize the color difference between healthy and damaged trees of different species; diagnose causal agents correctly; estimate intensity; delineate the extent of damage; and precisely record this information on a georeferenced, digital map. Air turbulence, cloud shadows, distance from aircraft, haze, smoke and observer experience can all affect the quality of the survey. These data summaries provide an estimate of conditions on the ground and may differ from estimates derived by other methods.

The aerial survey provides information on the current status for many causal agents, and is important when examining insect activity trends by comparing historical and current survey data over large areas.

Overview surveys are a 'snap shot' in time and therefore may not be timed to accurately capture the true extent or severity of a particular disturbance activity. Specially designed surveys with modified flight patterns and timing may be conducted to more accurately delineate the extent and severity of a particular disturbance agent. Special surveys, such as Swiss needle cast surveys, are conducted when resources are available to address situations of sufficient economic, political or environmental importance.

DIRECT ALL INQUIRIES TO:

Washington State Department of Natural Resources
Resource Protection
Forest Health
1111 Washington St. SE
Olympia, WA 98504

-- OR --

USDA Forest Service, Region 6
Natural Resources
Forest Health Protection
PO Box 3623
Portland, Oregon 97208

*******DISCLAIMER*******

The insect and disease data presented should only be used as an indicator of insect and disease activity, and should be ground-checked for precise location, extent, severity and causal agent.

Color coded polygons show locations where trees were recently killed or defoliated. Intensity of damage is variable and not all trees within coded polygons are dead or defoliated.

The cooperators reserve the right to correct, update, modify or replace GIS products without notice. Using this map for purposes other than those for which it was intended may yield inaccurate or misleading results.